



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/656,323

09/08/2003

Zhang Xiao Qiu

BHT-3111-359

9201

7590 08/22/2007
TROXELL LAW OFFICE PLLC
5205 LEESBURG PIKE, SUITE 1404
FALLS CHURCH, VA 22041

EXAMINER

STOREY, WILLIAM C

ART UNIT

PAPER NUMBER

2609

MAIL DATE

DELIVERY MODE

08/22/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/656,323

Applicant(s)

QIU, ZHANG XIAO

Examiner

William C. Storey

Art Unit

2609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-16 is/are rejected.
- 7) ☒ Claim(s) 1,8,10,11 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informality: the word "the" should be removed in the phrase "scopes overlapping with *the* each of the scanning areas." Appropriate correction is required.
2. Claim 8 is objected to because of the following informality: the word "the" should be removed in the phrase "distance from *the* each of the scanning areas." Appropriate correction is required.
3. Claim 10 is objected to because of the following informalities: the word "the" should be removed in the phrase "a resolution request of *the* each of the scanning areas." Appropriate correction is required.
4. Claim 11 is objected to because of the following informalities: the word "the" should be removed in the phrase "distance from *the* each." Appropriate correction is required.
5. Claim 15 is objected to because of the following informalities: the word "the" should be removed in the phrase "scanning scope of *the* each." Appropriate correction is required.

Art Unit: 2609

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 10, 11, and 12 are rejected under 35 U.S.C 102(b) as being anticipated by Hsieh (United States Patent 6,005,688), hereinafter referenced as Hsieh.

Regarding claim 10, Hsieh discloses a method for multi-job scanning used in an optical scanning device, the optical scanning device having an image-grabbing component driven in a scanning process between a scanning starting position and a scanning terminal position, the method comprising: configuring a plurality of scanning areas in the scanning process; determining a scanning order according to a distance from each of the scanning areas to the scanning starting position; and scanning each of the scanning areas by the image-grabbing component according to the scanning order and a resolution request of each of the scanning areas, wherein the image-grabbing component moves directly to a next scanning area after finishing a scanning area. In addition, Hsieh discloses a batch scanning method for an image input system. Further, Hsieh discloses a batch scanning method for an image scanner which reads on claimed "method for multi-job scanning used in an optical scanning device", as disclosed at column 1, lines 9-12; a moving array of photosensors, which reads on claimed "image-grabbing component," as disclosed at column 2, lines 58-60; further, Hsieh discloses an

Art Unit: 2609

inherent scanning process starting and terminal position, as evidenced by the fact that one of ordinary skill in the art would have recognized that the scanning process starting and terminal position would have been provided for the purpose of establishing a beginning and an end point based on the document being scanned. Hsieh discloses within that scanning process, the scanning and dealing with of three image sub-areas designated as Job A, B and C, which reads on "configuring a plurality of jobs in the scanning process," as disclosed at column 2, lines 50-57 and Figure 3. All the jobs are sorted, for example, a conventional quick sorting method, according to the top position of the job A, B, and C, which reads on claimed "determining a scanning order according to a distance from each of the scanning areas to the scanning starting position." Hsieh discloses the photodetector following the said order of the jobs, which reads on claimed "scanning each of the scanning areas (jobs) by the image-grabbing component according to the scanning order" "wherein the image-grabbing component moves directly to a next scanning area after finishing a scanning area," as disclosed at column 3, lines 31-43. In addition, Hsieh discloses a resolution configuration step, which reads on claimed "resolution request of [] each of the scanning areas (jobs)," as disclosed at column 2, lines 61-67 & column 3, 1-3.

Regarding claim 11, Hsieh discloses everything claimed with respect to claim 10. In addition, Hsieh discloses the photodetector moving backwards and directly to the top position of the next higher image higher than the bottom of the present image, which reads on "wherein the scanning order is determined from the near to the distant

Art Unit: 2609

according to the distance from [] each of the scanning areas to the scanning starting position," as disclosed at column 3, lines 32-43.

Regarding claim 12, Hsieh discloses everything as described for claim 10. In addition, Hsieh discloses figure 2, component 13 and "after scanning all [the] image areas, further comprising moving the light source and the photodetector to the home position of the image input system," which reads on claimed "returning the image-grabbing component to the scanning starting position after the scanning, as disclosed in column 5, 46-49.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 13 & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh in view of Lai et al (US Patent 6,115,149), hereinafter referenced as Lai.

Regarding claim 13, Hsieh discloses everything claimed as applied above in claim 10. However, Hsieh fails to describe an incorporation of a stepper motor that may vary its speed. In addition, the examiner maintains that it was well known in the art to provide a variable-speed stepper motor, as taught by Lai.

Art Unit: 2609

In a similar field of endeavor, Lai discloses an image-grabbing component driven by a variable-speed stepping motor. In addition, Lai discloses a motor-speed control apparatus for scanners. Further, Lai describes the "motor-speed control apparatus" "driven by a stepper motor" and discloses the motor-speed control apparatus's variability of speed, which reads on "wherein the image-grabbing component is driven by a variable-speed stepping motor," as disclosed at column 2, lines 64-67; column 3, line 1, and column 2, lines 58-62.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hsieh by specifically providing a variable-speed stepper motor, as taught by Lai, for the purpose of "allowing the scanner to be operated more efficiently."

Regarding claim 14, Hsieh and Lai disclose everything claimed as applied above (see claim 13). In addition, Lai discloses scanning comprising accelerating the variable speed stepping motor in non-scanning areas. Therefore, the examiner maintains that it was well known in the art at the time the invention was made to provide scanning comprising accelerating the variable speed stepping motor in non-scanning areas, as taught by Lai.

In a similar field of endeavor, Lai discloses "scanning comprising accelerating the variable speed stepping motor in non-scanning areas." Specifically, Lai discloses a motor speed control apparatus, wherein the CCD scan head moves over the target line by line at a fixed speed from the top edge to the bottom edge. Further, when the scan head reaches the bottom of the document, specifically the bottom of the target area of

Art Unit: 2609

the document, the scan head is promptly moved in a rapid mode back to the original starting position, disclosed at column 6, lines 14-36, and exhibited in Figure 1.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide scanning comprising accelerating the variable speed stepping motor in non-scanning areas, as taught by Lai, for the purpose of allowing the scanner to be operated more efficiently.

9. Claims 15 & 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh in view of Lai and further in view of Sato et al (US Patent 7,006,260), hereinafter referenced as Sato.

Regarding claim 15, the combination of Hsieh and Lai discloses everything claimed as applied above in claim 13. However, Hsieh and Lai fail to specifically describe an incorporation of a stepper motor that may vary its speed according to image type, resolution, and scanning scope. In addition, the examiner maintains that it was well known in the art at the time of the invention to provide a stepper motor with variable-speed capabilities according to image type, resolution, and scanning scope, as taught by Sato.

In a similar field of endeavor, Sato discloses scanning comprising adjusting the speed of the stepping motor according to image type, resolution, and scanning scope of each of the scanning areas. In addition, he discloses a method of controlling an image-sensing apparatus. Further, Sato describes a gear mechanism driven by a stepper motor (Figure 9, lines 60 & 68). The gear mechanism may be changed between a "high-speed side and the low-speed side" and the varying speeds "may be changed in

Art Unit: 2609

accordance with a communication speed, an image read mode (resolution, color/monochrome/binary), crop width, and/or ability of a host computer" (Column 15, lines 10-13). "Color/monochrome/binary" reads upon "image type," crop width reads upon "scanning scope," and resolution reads upon resolution.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Hsieh and Lai by specifically providing a stepper motor with variable-speed capabilities according to image type, resolution, and scanning scope, as taught by Sato, for the purpose of "allowing the scanner to be operated more efficiently."

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh, Lai, and Sato, hereinafter referred to as "the combination," in view of well known prior art (MPEP 2144.03).

Regarding claim 16, the combination discloses everything claimed as applied above (see claim 16). In addition, the combination discloses scanning comprising adjusting the speed of the stepping motor according to image type, wherein the image type comprises color or black and white. However, the combination fails to specifically disclose scanning comprising adjusting the speed of the stepping motor according to image type, wherein the image type comprises grayscale. However, the examiner takes official notice of the fact that it was well known in the art to provide scanning comprising adjusting the speed of the stepping motor according to image type, wherein the image type comprises grayscale.

Art Unit: 2609

Regarding scanning comprising adjusting the speed of the stepping motor according to image type, wherein the image type comprises color or black and white, Sato discloses that the motor's varying speeds "may be changed in accordance with a communication speed, an image read mode (resolution, color/monochrome/binary), crop width, and/or ability of a host computer" (Column 15; lines 10-13).

"Color/monochrome/binary" reads upon "image type," and the color and black and white definitions of image type.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination by specifically providing scanning comprising adjusting the speed of the stepping motor according to image type, wherein the image type comprises color, grayscale, or black and white, for the purpose of "allowing the scanner to be operated more efficiently."

Allowable Subject Matter

11. Claims 1-9 & 17-22 allowed.

12. The following is an examiner's statement of reasons for allowance:

Regarding claim 1, Hsieh discloses:

"A method for multi-job scanning used in an optical scanning device, the optical scanning device having an image-grabbing component driven in a scanning process between a scanning starting position and a scanning terminal position, the method comprising: configuring a plurality of jobs in the scanning process;" "determining a

Art Unit: 2609

scanning order according to a distance from each of the scanning areas to the scanning starting position; configuring a resolution of each of the scanning areas as a highest one of resolution requests of the scanning scopes overlapping with the each of the scanning areas; and scanning each of the scanning areas by the image-grabbing component according to the scanning order and the configured resolution, wherein the image-grabbing component moves directly to a next scanning area after finishing a scanning area."

In addition, Jin (US Patent 5880858) discloses:

"Re-allocating scanning scopes of the jobs into a plurality of scanning areas, wherein each of the scanning areas corresponds to one of following situations: covering one of the scanning scopes, covering part of one of the scanning scopes, and covering multiple ones or parts of the scanning scopes."

However, the prior art of record fails to disclose or fairly suggest setting the maximum resolution of scope resolution requests within an area encompassing overlapping scopes.

Regarding claim 17, Hsieh discloses:

"A method for multi-job scanning used in an optical scanning device, the optical scanning device having an image-grabbing component driven in a scanning process between a scanning starting position and a scanning terminal position, the method comprising:

configuring a plurality of scanning areas in the scanning process;"
scanning each of the scanning areas by the image-grabbing component according to a

Art Unit: 2609

resolution request of the each of the scanning areas and the order, wherein the image-grabbing component moves directly to a next scanning area after finishing a scanning area.

However, the prior art of record fails to disclose or fairly suggest skipping some jobs and doing them in a second order.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Pertinent Art

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mishima et al (US Patent 6,111,667) discloses an image processing apparatus and image forming apparatus connected to the image processing apparatus.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Storey whose telephone number is 571-270-3576. The examiner can normally be reached on Monday - Friday (Alternate Fridays off) 7:30-5 EST.

Art Unit: 2609

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jefferey F. Harold can be reached on 571-272-7519. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



WCS

William C. Storey
Examiner
2609



JEFFEREY F. HAROLD
SUPERVISORY PATENT EXAMINER